



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,764	01/09/2006	Kikuo Maeda	1761.1083	3405
21171	7590	04/01/2009	EXAMINER	
STAAS & HALSEY LLP			CHARLES, MARCUS	
SUITE 700			ART UNIT	
1201 NEW YORK AVENUE, N.W.			PAPER NUMBER	
WASHINGTON, DC 20005			3656	
			MAIL DATE	
			DELIVERY MODE	
			04/01/2009	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/563,764

Applicant(s)

MAEDA ET AL.

Examiner

Marcus Charles

Art Unit

3656

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2008 and 22 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-9 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This action is responsive to the Amendment/RCE filed 12/12/2008 and 12/22/2008, respectively, which has been entered. Claims 1 and 3-9 are currently pending.

Specification

1. The disclosure is objected to because of the following informalities: in page 8, line 13, the phrase "raw steel" is unclear and confusing because it is not clear if plain or normal "steel is considered as "raw steel" but steel is not a raw material but an alloy of iron and carbon. An explanation is required as to what type of steel is being considered as raw steel. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 3 and 5-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, the phrase "raw steel" renders the intended scope of the claim unclear because it is not clear if the claim is referring to steel as a raw material. Not in line 2, the claim refers to the raceway as being prepared from steel. Therefore, it is unclear as to the difference between "steel" of line 2 and "raw steel".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3 and 5-6, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama et al. (5,848,846) in view of Lewis (2,383,727) and Takemura et al. (6,332,714). Sugiyama et al. discloses a roller bearing comprising a plurality of rollers, a raceway member (1) is prepared from steel plate and is shape in the form of a cup having an inner raceway and two end portions (1a, 1b) to be bent; one end (1a) is bent inwardly to form a flange (1a) while the other end (1b) is kept straight in the axial direction, the entire raceway surface is subjected to hardening by carbonitriding and tempering by quenching in oil, the other end (1b) is annealed and softened to facilitate easy bending. Sugiyama et al. does not disclose the hardening is by induction hardening and tempering and the other end (1b) is bent without being hardened. Lewis discloses a bearing comprising a casing (10) in the form of a cup and having one bent end (12) and a lip (11) that is to be bent prior to hardening so that the metal can be bent and move into position more easily while still in relatively soft and to preventing crimping or irregularities (col. 2, lines 30-41). Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the device of Sugiyama et al. so that the second end is bent before being hardened in view of Lewis so that the metal can be bent and move into position more easily while still in relatively soft and to preventing crimping or irregularities. Takemura et al. discloses a bearing comprising an outer raceway surface and inner raceway surface that are subjected to induction hardening and tempering so as to provide excellent cold drawability and

improve wear resistance and extended life surface. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Sugiyama et al. so that the hardening process is carried out by induction hardening in view of Takemura et al. so as to provide excellent cold drawability and improve wear resistance and extended life surface.

In claim 3, Sugiyama et al. discloses the outer race having a hardness of 750-800 Hv but fails to disclose the hardness of the inner race. Takemura et al. discloses the raceway surface after hardening is H_{RC} is 59 (which is equivalent to 727 Hv, and the hardness of the other surface is 78 H_{RB} which is equivalent to 142 Hv. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the outer and inner races such that they have different hardness as set forth in the instant invention, since it has been held that discovering an optimum value of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 f.2nd 272, 205

In claim 5, Takemura et al. clearly shows that the depth of the induction hardened portion is smaller than the plate thickness (see figs. 2).

In claim 6, Takemura et al. discloses the material for the raceway (20) contain from 0.4%-0.9% of Carbon.

Response to Arguments

6. Applicant's arguments filed 2-16-2009 have been fully considered but they are not persuasive. Applicant contended that none of the references disclose an antifriction bearing having an inner surface of one of the collars is left as raw steel or not subjected

to some form of hardening. In response, it should be noted that the claim 1 recites "an inner surface of the other annular collar is left as a raw steel so as to be formed by bending". The claim does not go beyond bending and is not concern about the property of the steel after bending. Therefore, the prior art meets the claim.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ridley Richard can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marcus Charles
/Marcus Charles/
Primary Examiner, Art Unit 3656

Application/Control Number: 10/563,764
Art Unit: 3656

Page 6